



California Energy Commission

Staff Workshop
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Update to 2009 California Energy Demand (*CED 2009*) Energy Demand Forecast

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2011 IEPR Forecast Schedule

- Schedule for 2011 IEPR Forecast (*CED 2011*) has been extended
- CED 2011 preliminary forecast to be released in August; revised forecast in early 2012
- This updated forecast mainly for internal purposes; electricity only, “committed”
- Used econometric models (no end use)
- Three scenarios: low, mid, and high



Updated Forecast

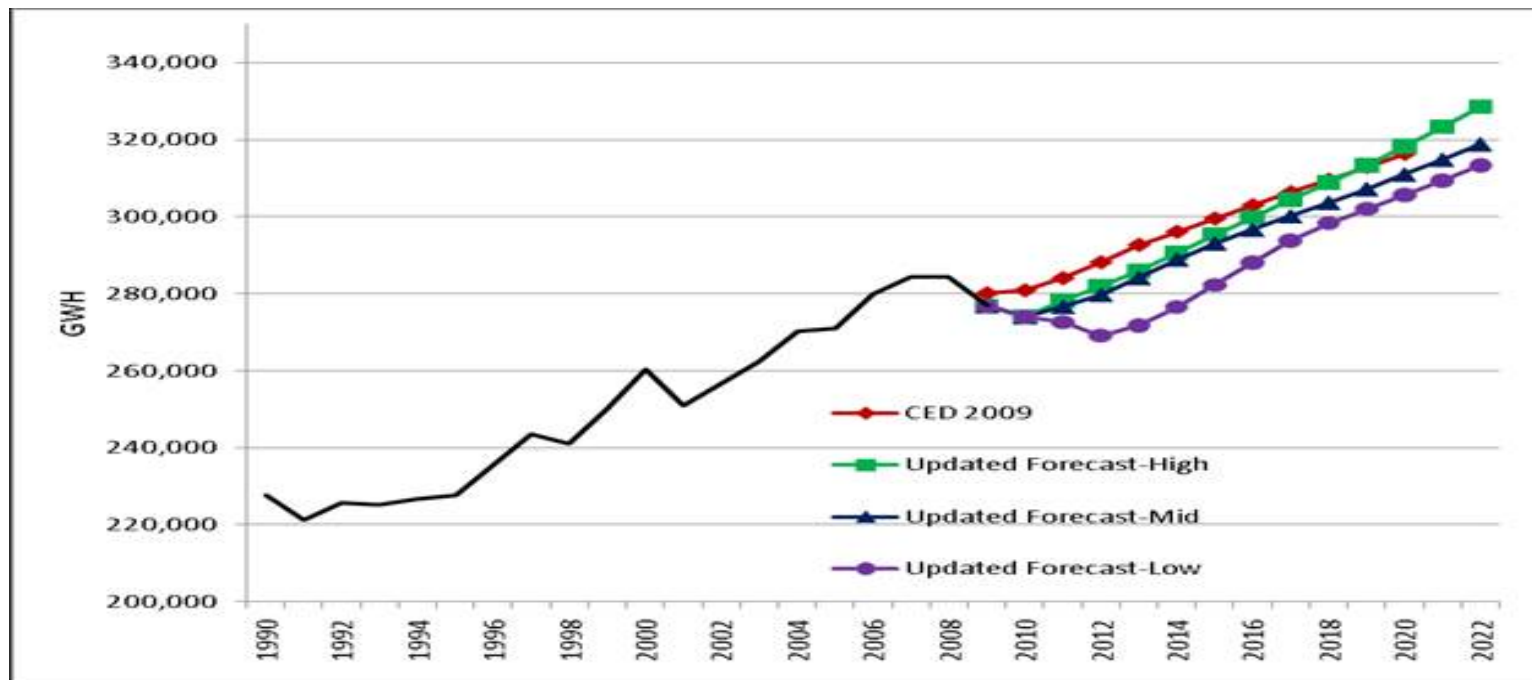
- Summary of Statewide Results
- Method
- Inputs
- Planning Area Results



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Statewide Electricity Consumption

Updated forecast grows at higher rate than *CED* 2009 in mid and high cases from 2010-2020

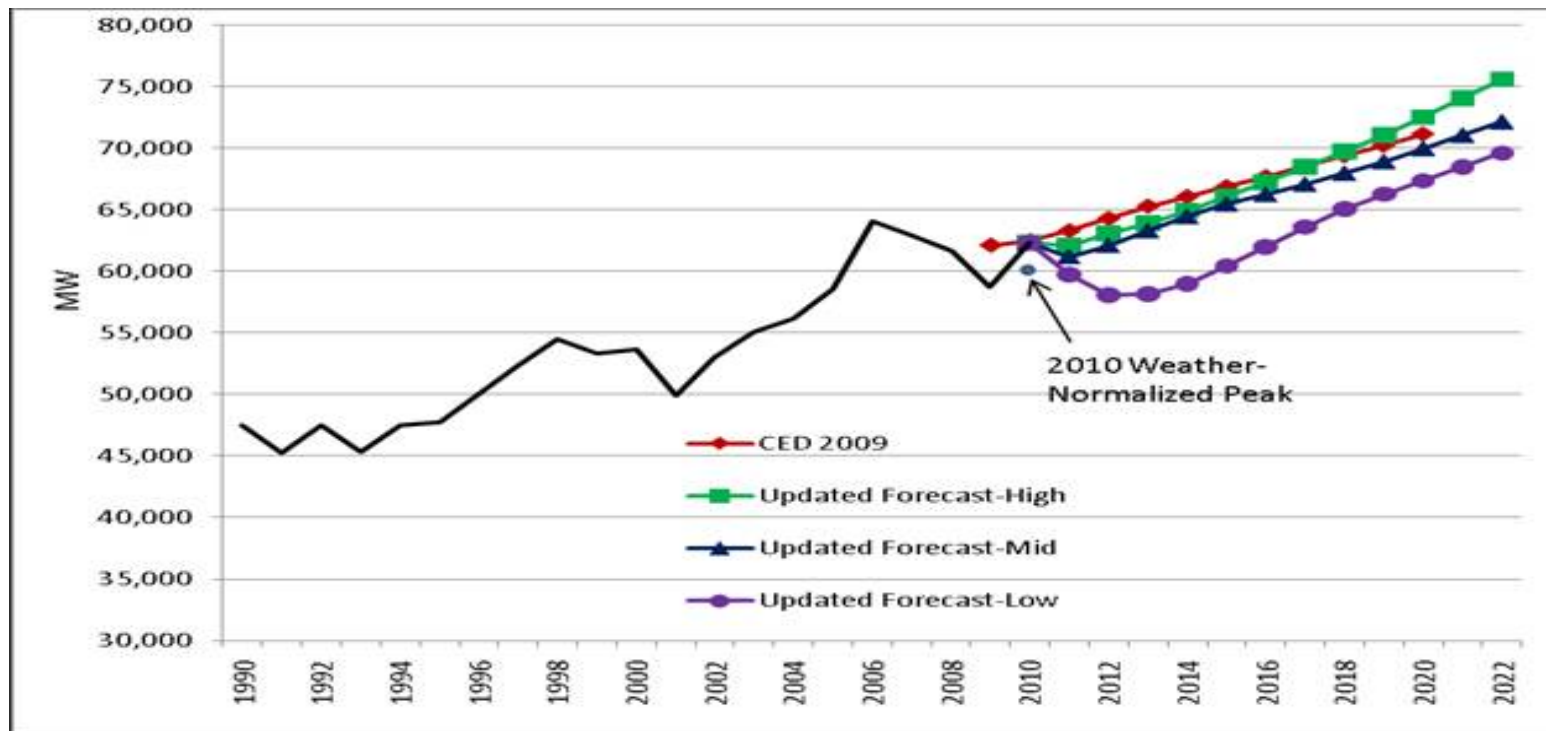




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Statewide Non-Coincident Peak

Updated forecast grows at higher rate than *CED* 2009 in mid and high cases from 2010-2020

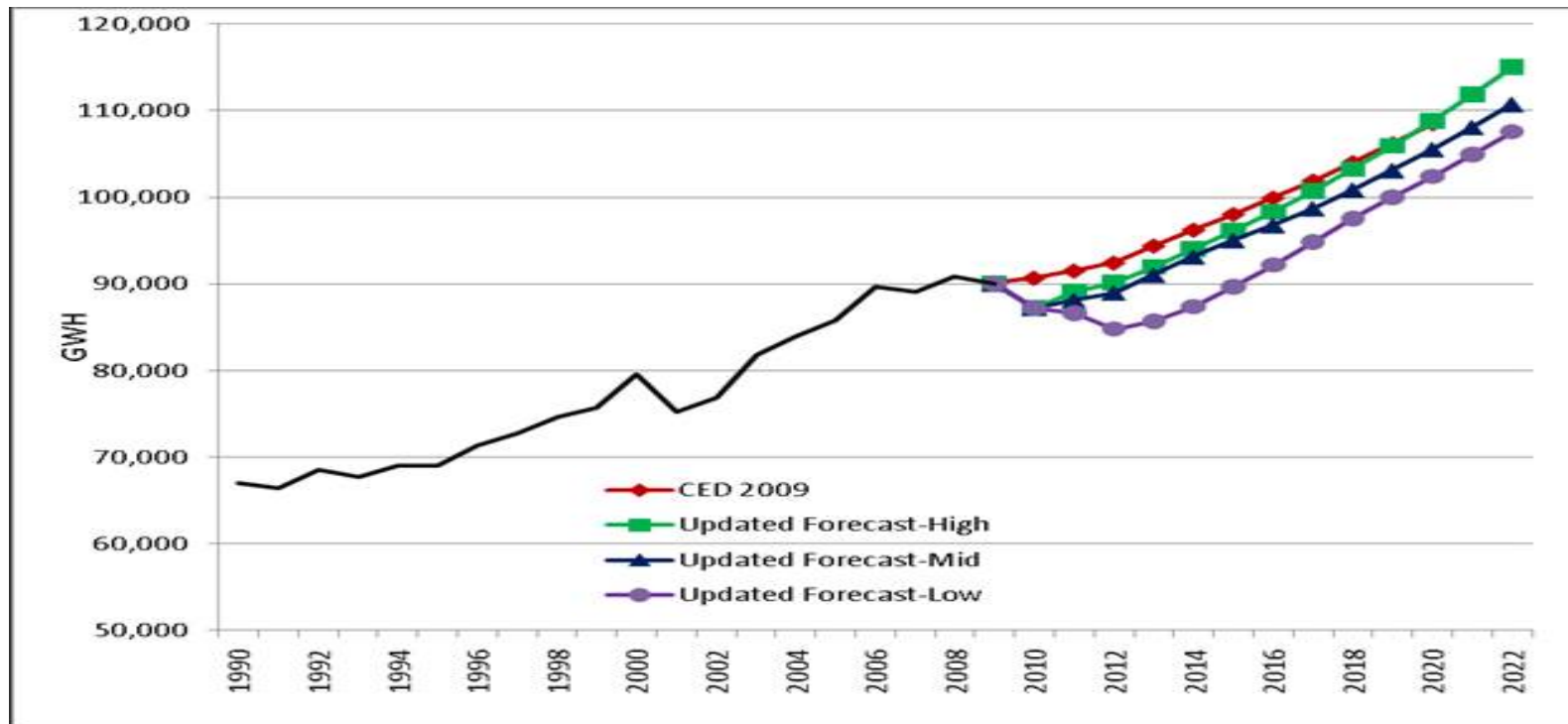




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Statewide Residential Electricity Consumption

High scenario surpasses *CED 2009* by 2020

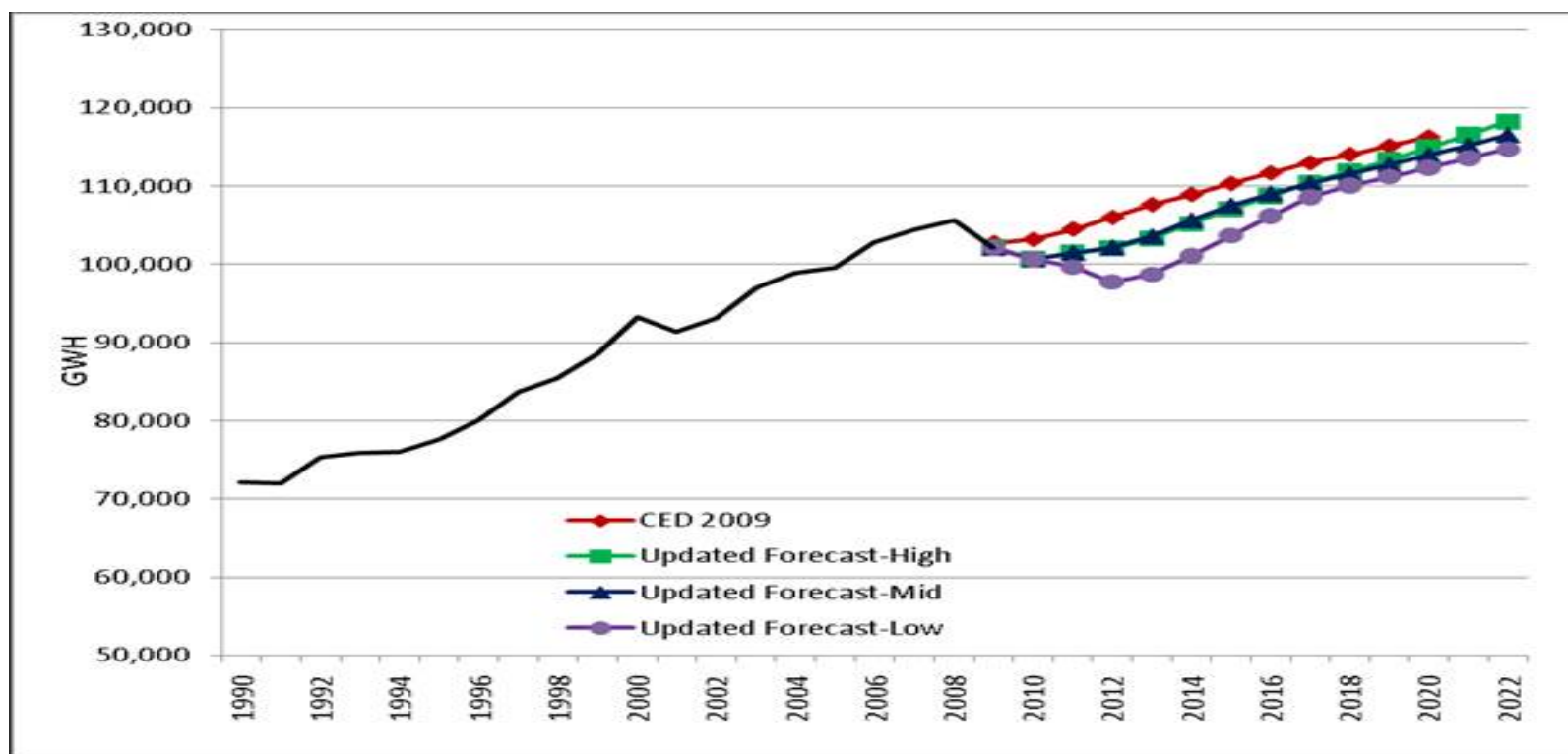




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Statewide Commercial Electricity Consumption

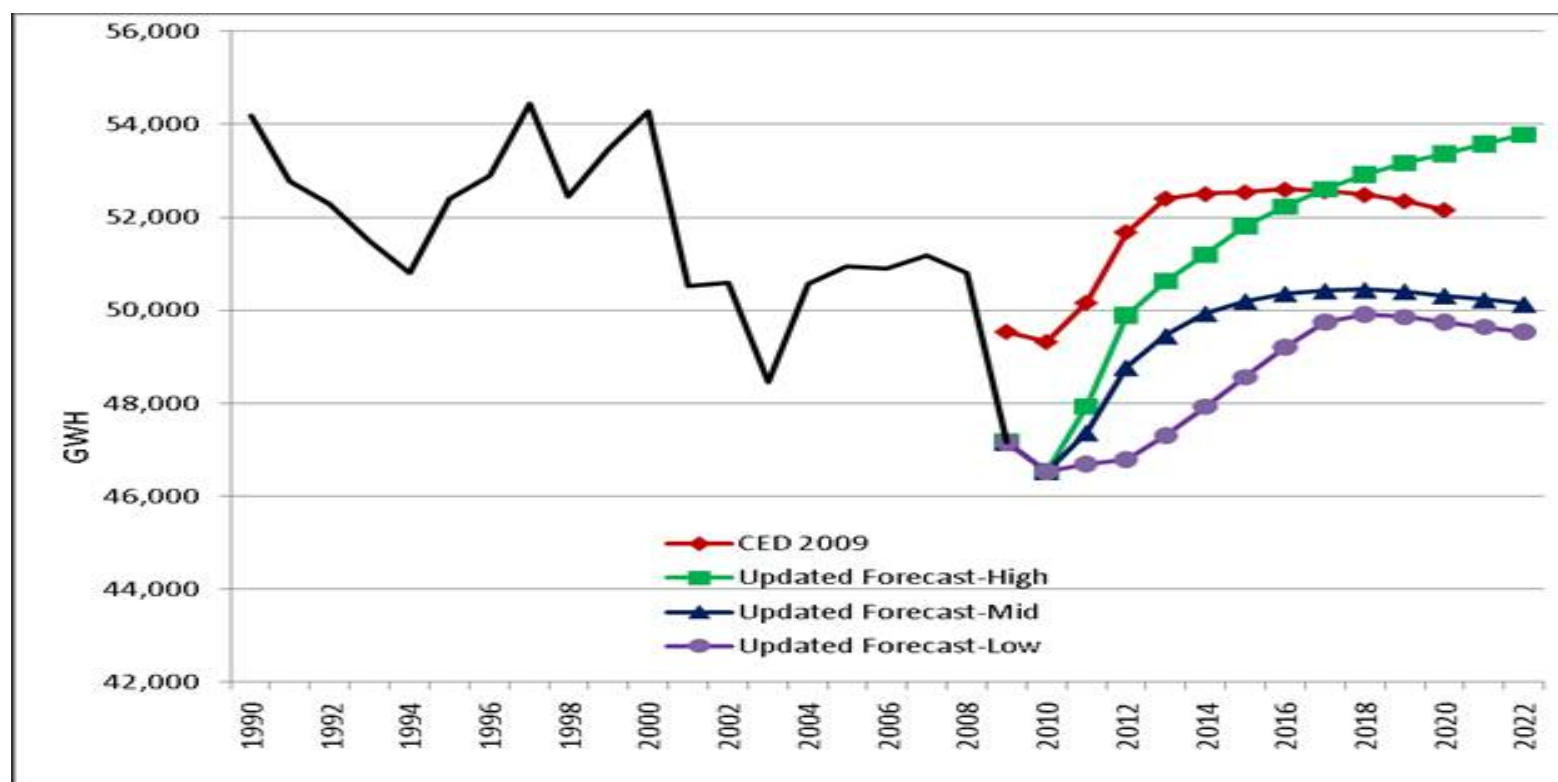
All three scenarios below *CED 2009* through 2020





Statewide Industrial, Construction, and Mining Electricity Consumption

Recovery, then reverts to long-term trend





Method

- Econometric models estimated for:
 - Residential Sector
 - Commercial Sector
 - Industrial Sector
 - Construction and Mining Sector
 - Peak Demand
- Residential, commercial, and peak are updated from *CED 2009* econometric models; industrial and construction and mining are new



Method

- New TCU/Street Lighting forecast (trend analysis)
- Focus is on impacts of change in economic outlook vs. *CED 2009*
- Also new rate forecasts
- No change in efficiency, self-generation, or EVs from *CED 2009*
- Results benchmarked to *CED 2009*



Method: Econometric Models

- Econometric models use cross-section/time series data
- Residential Econometric Model (per HH)
 - Per-Capita Income
 - Unemployment Rate
 - Cooling Degree Days
 - Heating Degree Days
 - Persons per Household
 - Average electricity rates
 - Time trends



Method: Econometric Models

- Commercial Econometric Model
 - Total Output
 - Commercial Floor Space
 - Commercial Employment/Floor Space
 - Percent of Floor Space Refrigerated
 - Cooling Degree Days
 - Average Commercial Rates
 - Average Natural Gas Rates
 - Time Trends



Method: Econometric Models

- Industrial Econometric Model
 - Manufacturing Output
 - Manufacturing Output/Manufacturing Employment
 - Output Textiles, Printing, Metal/Manufacturing Output
 - Average Industrial Electricity Rate
 - Time Trend



Method: Econometric Models

- Construction and Mining Econometric Model
 - Employment in Mining and Construction
 - Mining Output
 - Average Industrial Electricity Rates
 - Time Trends



Method: Econometric Models

- Peak Econometric Model (per capita)
 - Per-Capita Income
 - Unemployment Rate
 - Number of Households/Population
 - Annual Max631 Temperature
 - Average Residential Electricity Rates
 - Time Trends



Inputs

- Economic/Demographic Scenarios from Moody's and Global Insight
- Electricity rate scenarios generated with E3 calculator
- Natural gas rate scenarios from EIA, Bentek, and futures prices
- Population forecast from Moody's
- Commercial floor space scenarios generated with Energy Commission floor space model



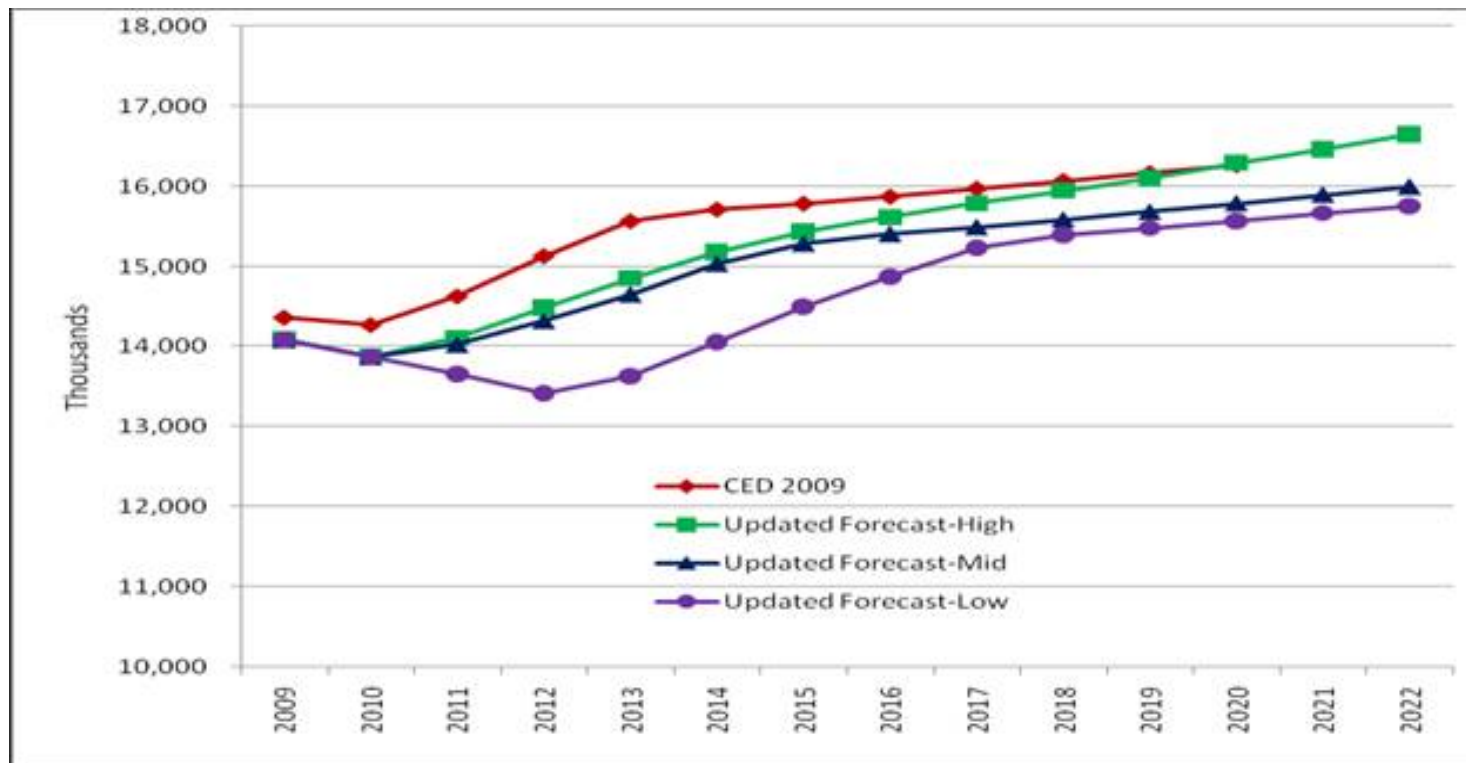
Inputs: Scenarios

- Low
 - Low economic growth (Moody's "protracted slump" scenario)
 - High Rates
- Mid
 - Mid economic growth (Moody's base case)
 - Mid Rates
- High
 - High Economic Growth (Global Insight "optimistic" scenario)
 - High Rates



Inputs: Statewide Employment

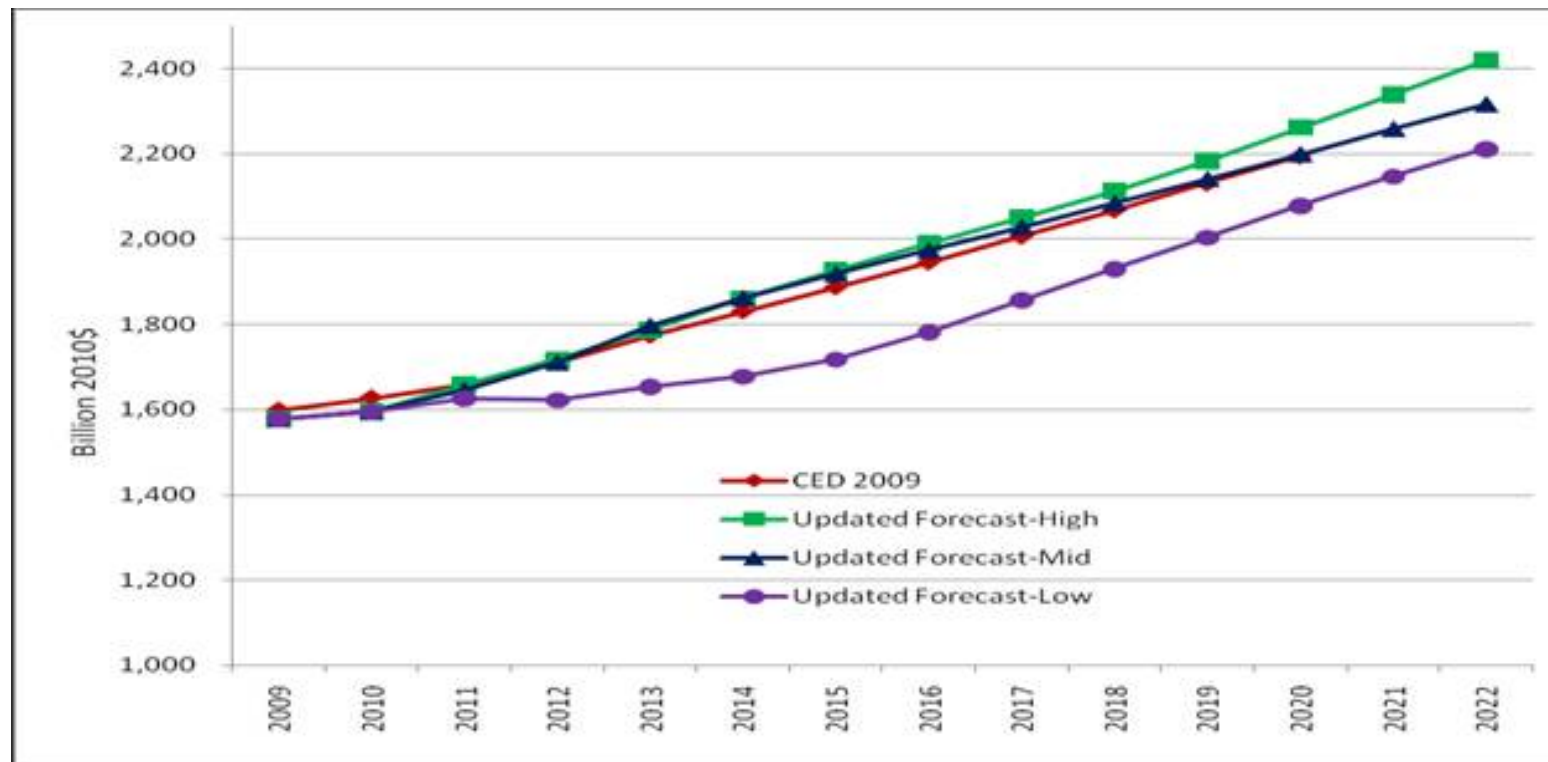
High Scenario matches CED 2009 by 2019





Inputs: Statewide Personal Income

Faster growth vs. CED 2009 than employment

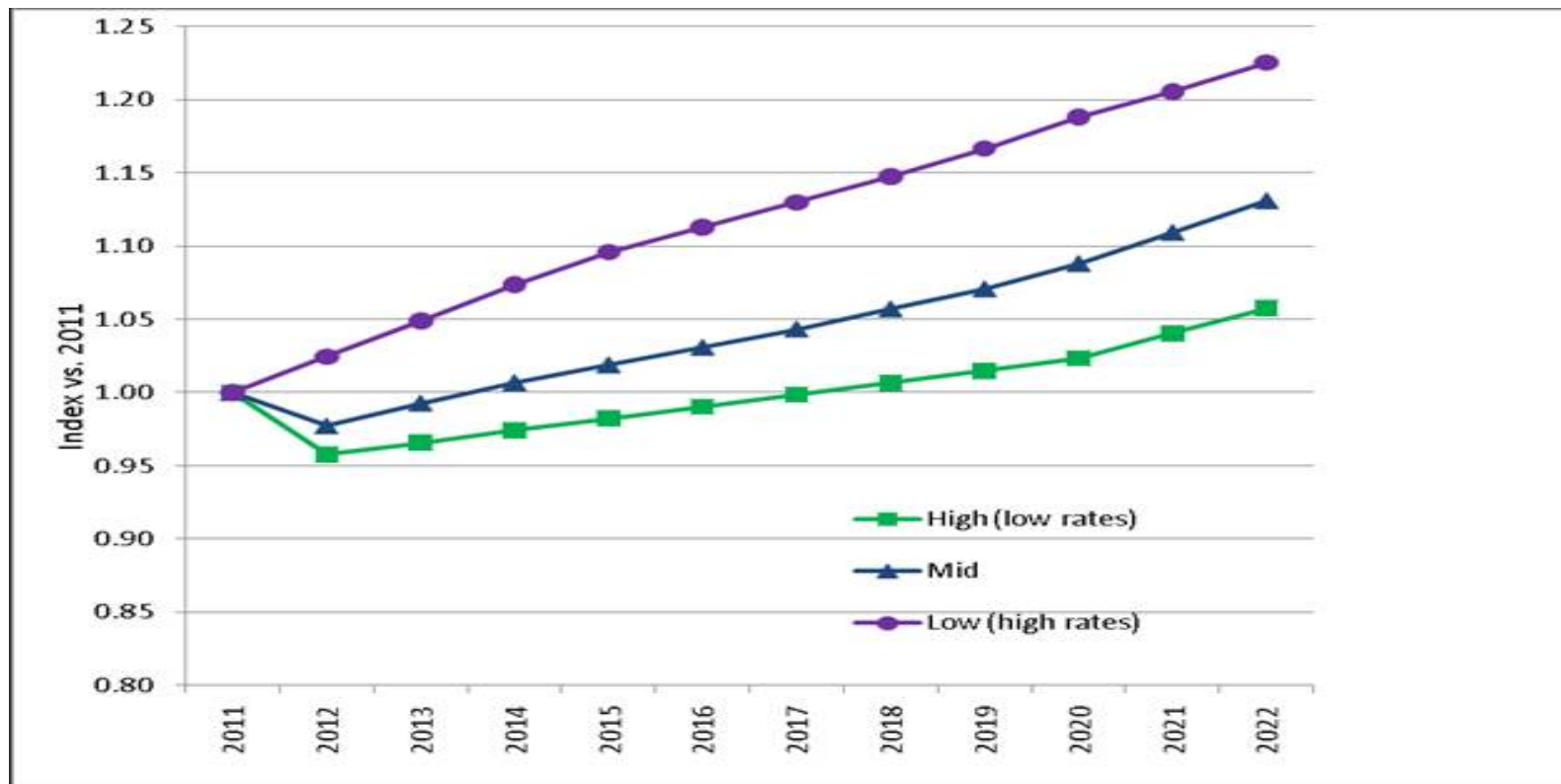




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Inputs: Electricity Rate Growth

Indexed, 2011=1





Planning Area Results

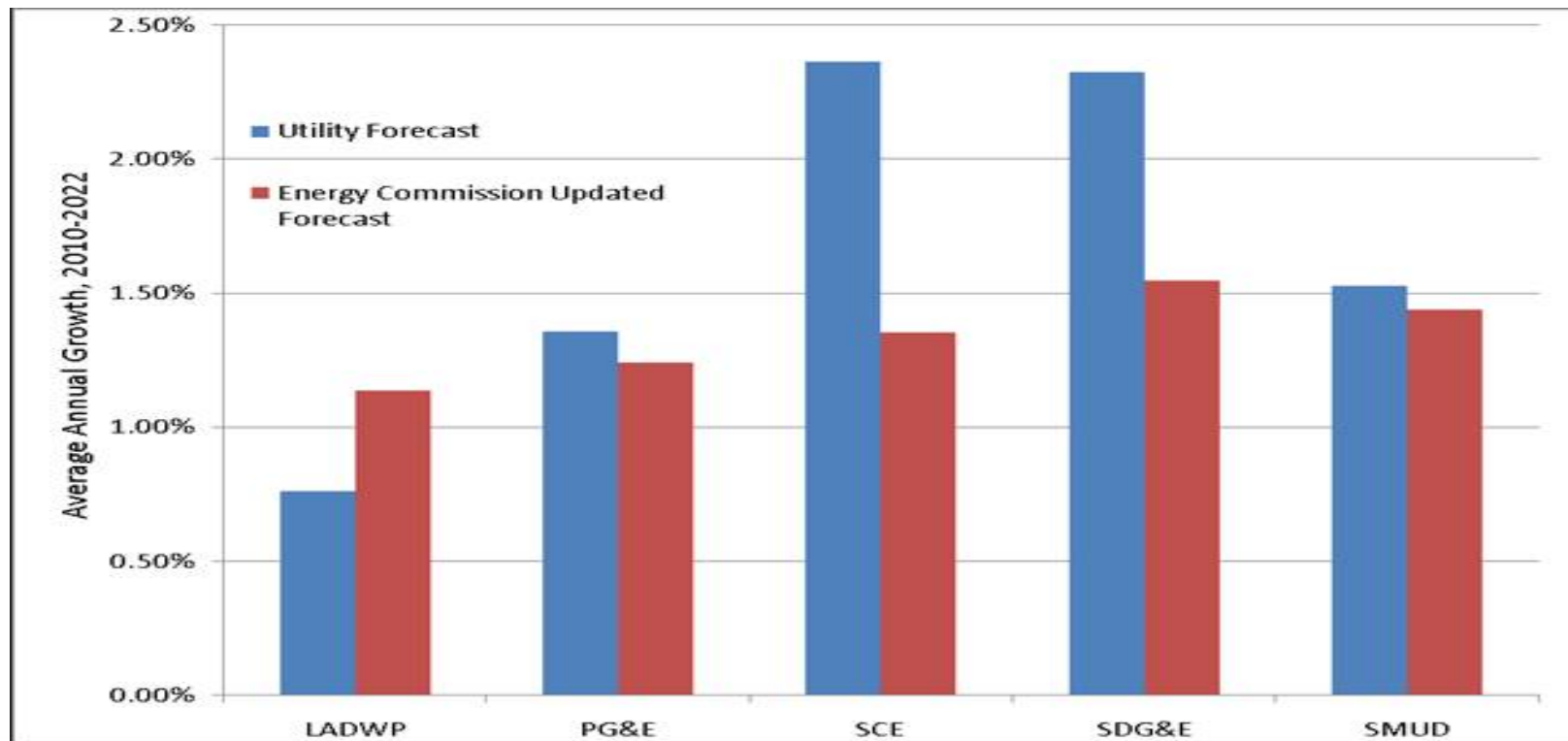
Big 5: LADWP, PG&E, SCE, SDG&E, SMUD

- Projected consumption and peak growth from 2010 to 2020 is faster in the mid and high demand scenarios compared to *CED 2009* for all five planning areas
- Mid scenario forecast consumption and peak demand typically surpass *CED 2009* 2020 levels by 2021 or 2022
- Highest growth in SDG&E and SMUD planning areas from 2010-2022, lowest in LADWP



Comparison of Sales Forecasts: Utility and Updated Mid Forecasts

Average Annual Growth, 2010-2022 (Committed)

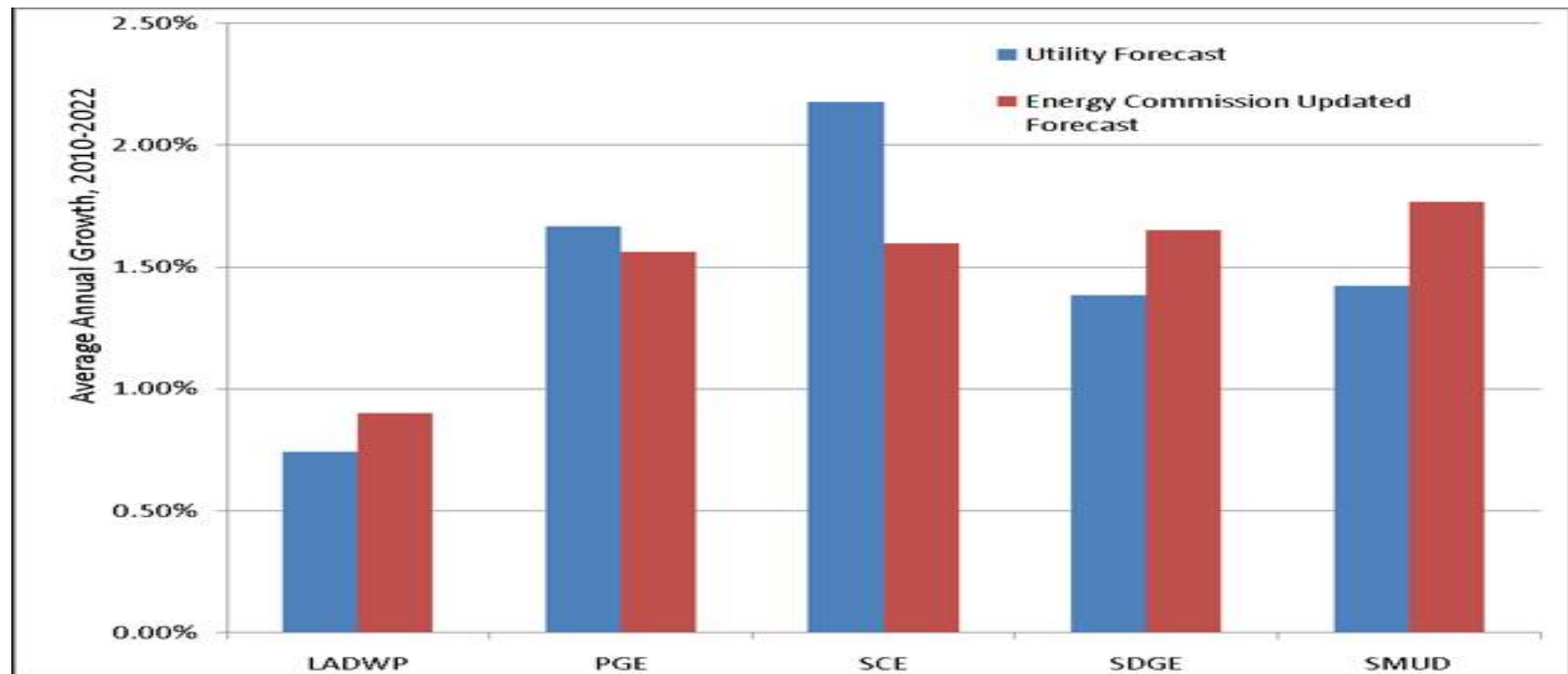




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Comparison of Peak Forecasts: Utility and Updated Mid Forecasts

Average Annual Growth, 2010-2022 (Committed)





Next Steps

- Demand Analysis Working Group (Demand Forecasting Subgroup) should meet and discuss differences
- Understand, reconcile, adjust
- Preliminary forecast using both end use and econometric models released August 16, 2011
- Workshop for preliminary forecast on August 30, 2011